

Forest Insect and Disease Management
P.O. Box 5895, Asheville, N.C. 28803

REPLY TO: 5230 - Evaluation

May 25, 1977

SUBJECT: Fall Cankerworm

TO: James E. Douglass
Coweeta Hydrologic Laboratory N.C.



Defoliation by the fall cankerworm, Alsophila pometaria (Harr) was first detected on the Coweeta Hydrologic Laboratory in 1968. The head of the infestation is continuing its movement down the watershed each year. Infestations are now established in watersheds #27, #36, and #37. This survey was made to determine the present extent of the infestation and to predict the severity of defoliation expected this year.

In March 1977 three areas were sampled according to the sequential sampling technique developed by R. Tallerico for predicting defoliation. Ten plots were distributed evenly over the infested area. Predictions are based on the number of egg masses found on five 30-inch branches taken from the mid-crown of each sampled tree. Due to the height of some of the trees in some of the plots, only lower crown branches were sampled. Because of this, prediction may predict lighter defoliation than will actually occur.

From these samples egg masses were collected and reared out in the laboratory to determine egg viability. After larvae emergence was complete the egg masses were dissected to determine the cause for failure of some of the eggs to hatch, due either to parasitism or being non-viable. Parasitized eggs contained the developing or adult form of the egg parasite Telenomus alsophilae (Vier.) The number of eggs per mass were counted and the percent of sound, non-viable and parasitized eggs for each area were calculated. Results of the egg viability count are contained in Table 1.

Table 1: Fall Cankerworm Egg Parasitism by Telenomus
alsophilae. Average of infested areas on Coweeta
Hydrologic Laboratory, Franklin, N.C.

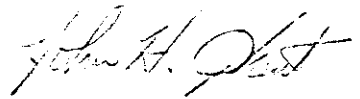
<u>Year</u>	<u>% Viable Eggs</u>	<u>% Parasitized</u>	<u>% Non-viable</u>
1973	70.53	29.25	0.15
1974	63.02	26.69	10.29
1975	91.67	6.56	1.87
1976	70.33	17.67	13.33
1977	55.25	27.26	17.43

Figures 2 and 3 show plot location and amount of defoliation expected at each sampled area. Based on the survey heavy defoliation can be expected on watersheds #36 and #27, with light defoliation occurring on watershed #37.

Egg parasitism has continued to increase but is still not at a high enough level to provide adequate control. The increase in non-viable eggs may be an indication of the declining vigor of the population or may be caused to the extreme low temperatures experience this winter.

Forest Insect and Disease Management will conduct an aerial survey in early June to determine the extent and areas of defoliation which occurred this spring.

If there are any questions please contact Forest Insect and Disease Management, Asheville, N.C.


HAROLD W. FLAKE
Field Representative

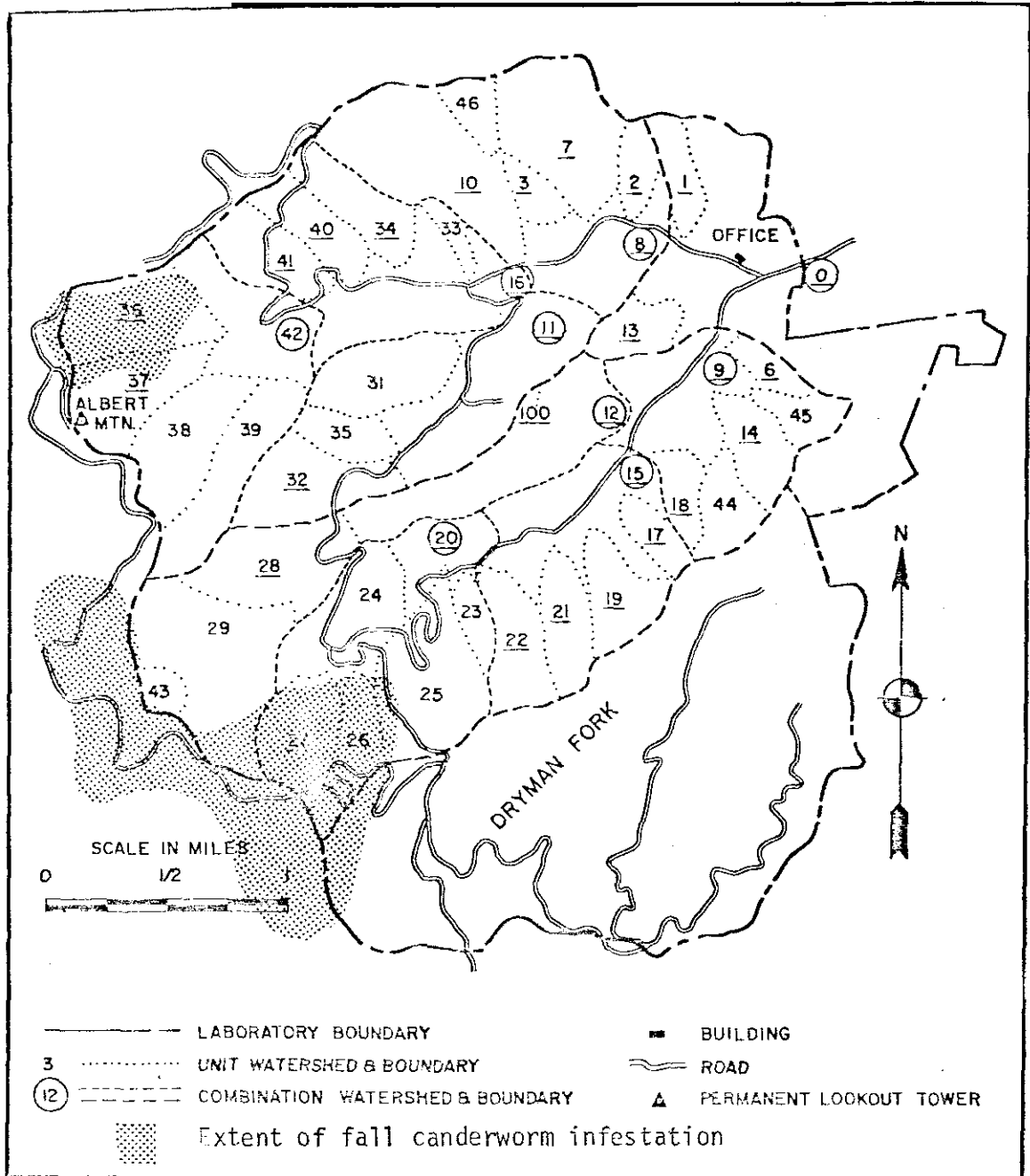


Figure 1: Extent of Infestation on Coweeta Hydrologic Laboratory, N.C. 1977

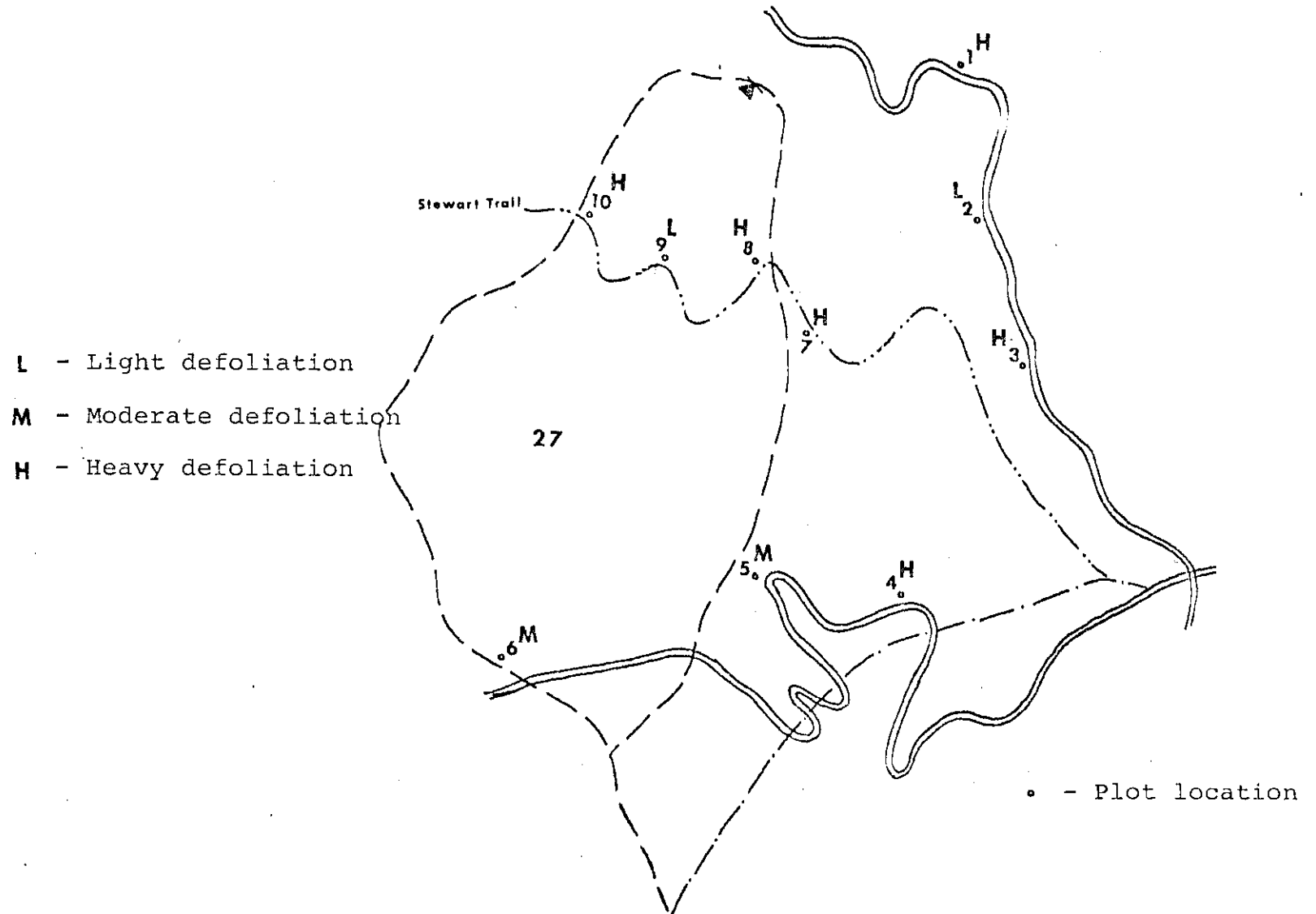


Figure 2: Plot location and prediction of defoliation by the fall cankerworm on Watershed #27, Coweeta Hydrologic Laboratory, N.C..

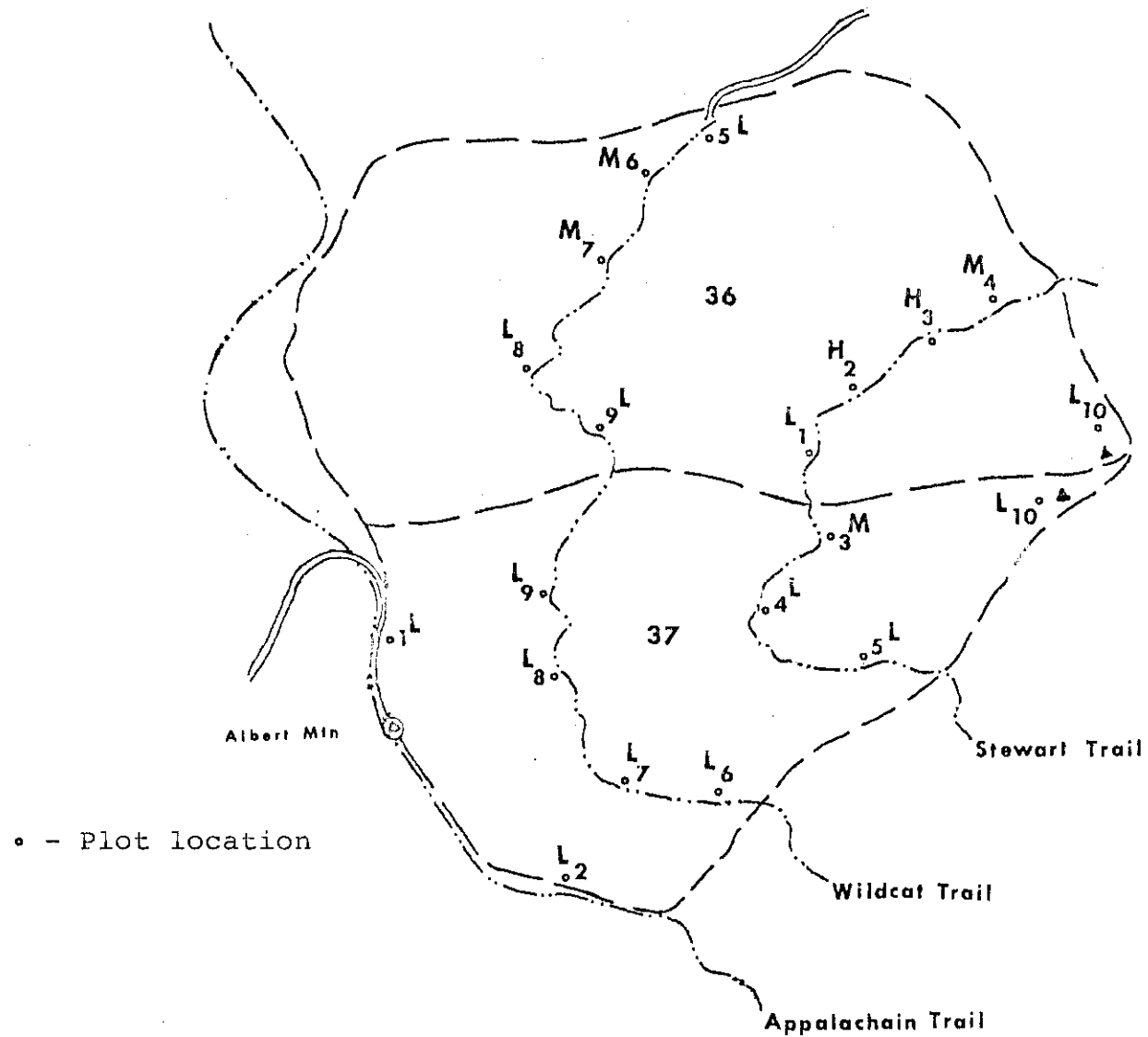


Figure 3: Plot location and prediction of defoliation by the fall cankerworm on watersheds #36 and 37, Coweeta Hydrologic Laboratory, N.C..